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ABSTRACT

A proposal for a preservice agricultural education teacher preparation program involves the examination of seven aspects: (1) role statement; (2) curriculum; (3) instruction; (4) facilities and resources; (5) student selection; (6) faculty; and (7) evaluation. Agricultural teachers have many roles: facilitator of learning; program developer; administrator; decision maker/problem solver; understander of the learner; professional and scholar; role model; and disciplinarian. The curriculum should link general education, specialty studies, professional studies, and clinical and field-based experiences to support teacher preparation. Teacher educators may use a number of instructional alternatives in teaching abilities, concepts, skills, and attitudes. Proper resources and facilities are required to teach with a variety of instructional alternatives. Information about instructional and support facilities, instructional equipment, and off-campus facilities will serve as a framework for organizing recommendations for an agricultural education program. The most commonly used criteria for admission into teacher preparation programs are grade point averages, interviews, formal applications, physical examinations, speech tests, written language tests, and standardized tests. Faculty selection is the key to a successful preservice program. Program evaluation provides a solid foundation for decision making, planning, and implementation. (This document includes 9 tables, 5 figures, and 47 references.) (NLA)

A PROGRAM FOR THE PREPARATION OF PRESERVICE TEACHERS OF AGRICULTURAL EDUCATION

by

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INTRODUCTION

"Teacher education is big business. Each year more that 100,000 aspiring teachers are graduated from over 1,200 colleges and universities in the United States. Many of them join the two million teachers currently in the work force. The education of teachers is not only big business, it is important business to a democratic nation that depends on an educated citizenry."

Donald R. Cruickshank
Models for the Preparation of America's Teachers
1985, p. 1

Agriculture has a long history of being in the business of education. Agriculture was first taught formally in the United States in 1733. A year later, the Salzburger family established what was probably the first specialized school of agriculture where children of agriculture were taught to farm successfully (Moore, 1987). The passage of the Morrill Act in 1862 set the stage for more formal agricultural education. This act reflected the importance that policy-makers placed on agriculture (Tenney, 1977).

In 1907, the United States Congress passed the Nelson Amendments to the Morrill Act. These amendments provided the first federal funds to prepare teachers of agriculture. In effect, the amendments supplemented states' legislation by providing an institution base for preparing teachers (Swanson, 1986). In 1917, Congress further defined the federal role of agricultural education with the passage of the Smith-Hughes Act, which established additional agriculture teacher training programs.

As education in agriculture progressed through the years, many changes came with it. Since 1907, the discipline of agricultural education has felt the influences of external forces impacting both

agriculture and education. These forces include demographics; urbanization; rapid gains in worldwide agricultural production capacity; domestic farm and trade policies; lifestyle changes; the explosion in knowledge caused by computers; specialization within the professions; and public expectation about the role of schools, and public institutions (National Academy of Sciences, 1988). Consequently, in February and May 1989, the National Summit on Agricultural Education was held for the purpose of developing The Strategic Plan for Agricultural Education. The mission was defined "...to provide a total dynamic educational system." With this in mind, several goals and resolutions were formulated. One resolution stated, to "...develop a united national presence and collectively move towards greater achievements in education and agriculture."

In order to move towards greater achievements in education and agriculture, teachers of agriculture must possess a repertory of knowledge, skills and attitudes. These knowledge, skills and attitudes must be considered when developing a teacher education program.

Thus, in determining how individuals might be best prepared as quality teachers in the instruction of agriculture, all aspects of the preservice teacher preparation program require consideration. The components include: a role statement, curriculum, instruction, facilities and resources, student selection, faculty, and evaluation. Each of these aspects will be addressed in detail in the following program proposal.

ROLE STATEMENT

In attempting to develop a preservice agricultural teacher education program that will produce future agriculture teachers with the needed knowledge, skills and attitudes, the roles must be identified. In identifying these roles, it should be recognized that the roles of the agriculture teacher are continuously changing and will continue to change in the future.

Howsam (1976) indicated that there is a lack of agreement in defining the roles of the teacher. The lack of scholarly research has left many in the position of identifying the roles of the teacher based on individual opinions and attitudes.

The authors of this proposal have identified eight roles a teacher of agriculture must perform. While the roles of the agriculture teacher are discussed separately, in reality they are not discrete but occur within an integrated structure of dynamic relationships. The roles of the agriculture teacher include facilitator of learning, program developer, administrator, decision maker / problem solver, understander of the learner, professional and scholar, role model, and disciplinarian.

Facilitator of Learning

The primary role of teachers of agriculture is the facilitation of change and learning in students. Teachers are knowledgeable individuals in specific subject areas who are capable of sharing this knowledge with students through teaching.

As facilitators of learning, teachers of agriculture require cognitive knowledge in teaching and learning theory, in addition to

the technical skills and a background in the subject of agriculture. This role requires teachers of agriculture to possess psychomotor skills in order to demonstrate technical skills to students. The agriculture teacher also works in the affective domain through teaching attitudes and self-esteem (Deeds, 1984 and Cano, 1986).

As facilitators of learning, teachers should take into account the attitudes, cultural experiences, development, and viewpoints of students in order to provide motivation for learning (Heck and Williams, 1984). The teacher must be aware of the principles of teaching and learning (Newcomb, McCracken, and Warmbrod, 1986) and manipulate the teaching style, environment, and students to provide a sound learning environment.

Heck and Williams (1984) recommend that teachers promote critical thinking and problem solving skills to develop students' abilities to meet the challenges of everyday life. This view by Heck and Williams of teachers, utilizing problem solving and critical thinking skills, is prominent in the philosophy of agricultural education (Moss, 19[illegible]; Newcomb, McCracken, and Warmbrod, 1986).

Program Developer

A function of a teacher of agriculture is to provide a program which will best meet the educational needs in agriculture of all people living in a school area (Phipps and Osborne, 1988). As program developers, teachers are involved in the development of general curriculum goals and policies. Juergenson (1967) indicated

that teachers are free to develop what they believe to be worthy goals. These goals must be tested against the reaction of the community. Additionally, the role of the teacher as a program developer is influenced by political, cultural, technological, and social realities (Heck and Williams, 1984). Dewey (1900) wrote that the scheme of a curriculum must adapt with the intentions of improving the life we live in common so that the future will be better than the past.

If teachers are to become effective program developers, they need to broaden their definition beyond academic achievement; work with parents and other members of the educational community to acquaint them with curriculum goals that focus on the development of the total learner; study the theories and practices that constitute the development of American education and the fundamental principles that underlie educational processes; and change to meet the needs of a rapidly changing world (Heck and Williams, 1984). Teachers of agriculture must plan their programs with rigor and challenge, while keeping teaching and learning activities meaningful for every student (Phipps and Osborne, 1988).

Administrator

The diversity of agricultural education programs dictate that a teacher must be a competent administrator in order to direct the total program. Heck and Williams (1984) identified activities central to the role of administrator including planning, organizing, scheduling, communicating, reporting and evaluating.

Planning is an important daily activity if agriculture

teachers are to make the best of the few hours they have to spend with students each day. Planning is primarily concerned with the development of lesson plans and setting the goals and priorities for courses. "Planning is a continuous process for teachers who must assess students' needs, abilities, and interests and address these variables in the classroom plan" (Heck and Williams, 1984).

Teachers need to be able to organize materials, programs, and activities that provide the best learning environment possible. Teachers need organization in their teaching, however they must possess the ability to be flexible enough to adapt and modify to the present situation.

The administrative function of scheduling includes the scheduling of subject matter to be taught, planning time, and administrative functions. Scheduling of subject matter includes the responsibility of following state-mandated requirements fc teaching the content of the subject and teaching the educational competencies required for the course as outlined by the state department of education.

Communication is an important role of the agriculture teacher. Teachers must communicate effectively with colleagues, administrators, and parents. They must realize the importance of a positive school-community relations. "Teachers of agriculture, in many cases, are liaisons between their schools and the agricultu: 'agribusiness communities" (Amberson and Bishop, 1981, p. 76).

The final administrative role of the teacher is reporting and evaluation. Teachers are responsible for the evaluation and

reporting of students' progress. Record keeping is a continuous process for teachers. Teachers primarily report student progress through grades. However, teachers need to be familiar with other methods of reporting student progress.

Decision Maker / Problem Solver

The role of a teacher involves decisions that need to be made on a daily basis that affect the lives of students--decisions that range from minute ones to those of much greater magnitude. As effective decision makers, teachers need to constantly gather data about each student, themselves, and the interdependent influences in the total ecological context. Additionally, teachers need a repertoire of alternatives or solutions to problems from which they can choose. They must have autonomy necessary to make decisions; learn how to orchestrate instructional approaches within a developmental plan and develop the ability to see a problem from the students' viewpoints as well as their own, taking into consideration all of the factors that come into focus from both perspectives (Heck and Williams, 1984). Thus, the role of a teacher of agriculture becomes one of exercising judgement into the welter of needs, pressures, facts and countless other factors in order to plan best for each community (Juergenson, 1967).

Understander of the Learner

Heck and Williams, (1984) state that numerous environmental forces influence a student's behavior including the people, places and events encountered either directly or indirectly. As he/she

interacts with environments, behavioral changes occur. These changes are unique for each student; what is perceived as a positive influence for one may be perceived as a stressful influence for another.

Students are also influenced by others who share their life space. They are affected by highly integrated and complex components of the natural and man-made worlds. These include the family context, the school-community context, and the many social contexts such as clubs, athletic teams, and church groups.

If teachers are to truly serve as understanders of student behavior, they need to comprehend, accept, value and affirm respect for all people regardless of gender, racial, cultural, ethnic, religious, and physical differences. Understanding students within multiple contexts is critical; however, the real challenge for the professional teacher is taking action and making decisions that are based on that knowledge.

Professional and Scholar

Heck and Williams (1984) identified the teacher as a professional. Their description included teachers who function as colleagues with others who are involved in the education process and the teacher serving as a professional leader in various capacities.

A teacher of agriculture must be professionally minded, working for the benefit of the students and community. Being professional includes becoming involved in professional organizations of agricultural education and of the teaching

profession in general. Phipps and Osborne (1988) identified the importance of the agriculture teacher as a professional when they stated that agriculture teachers should have the "ability to behave as professional educators and as members of a professional group." The teacher of agriculture should become a scholar through life long learning activities and consuming of research that will be of importance to the improvement of their teaching skills and program development.

Role Model

A basic role of the teacher is that of being a model to their students and to all who think of them as a teacher. The Strategic Plan for Agricultural Education (1989) resolved that teachers of agriculture need to serve as role models and mentors and lead by example. Heck and Williams (1984) support the concept of the teacher as a role model to assist students in developing their human qualities in a productive manner. Juergenson (1967, p. 64) states that "each community expects, and perhaps has a right to expect, a certain standard of conduct from its teachers. Naturally, teachers play an important part in helping develop attitudes, ambitions, moral and physical standards, and other basic values that parents are concerned with in the development of their children."

Disciplinarian

Heck and Williams (1984) state, there is no such thing as a

problem free environment, nor should there be. Problems are an inevitable part of living. Teachers must understand that students abilities, traits, and values are always in a state of change. In making decisions concerning classroom discipline, the teacher must remember that the student is reacting to more than a single event.

Maintaining order in the classroom is as much a part of the teaching-learning process as anything else. In order to allow students to learn and maintain some pattern or scheme of learning, teachers must establish and maintain some form of classroom order.

Juergenson (1967) states most discipline incidents occur within the classroom; here regimentation is greatest and natural instincts of students are most repressed. Therefore, the teacher must call upon his resourcefulness in order to gain attention, motivate, and effectively guide students. An administrator or counselor does not like to handle discipline problems, especially those that could be effectively handled in the classroom. Teachers should do their utmost to handle their own student problems.

Four sources served as references in identifying the abilities, knowledge, skills, and attitudes required by agriculture teachers in performing the following specific roles. The four sources were: 1) Ohio Agricultural Education Service (1978); 2) Handbook On Agricultural Education In Public Schools (Phipps and Osborne, 1988); 3) Standards For Quality Programs In Agricultural/Agribusiness Education (1977); and 4) Methods of Teaching Agriculture (Newcomb, McCracken, and Warmbrod, 1986).

Abilities, Knowledge, Skills, and Attitudes Required By Agriculture Teachers To Perform As A

Facilitator of Learning

1. Be knowledgeable and competent in performing teaching activities that provide for maximum student learning.
2. Prepare for classroom teaching:
   a. Plan courses of study for an entire year for each grade to be taught.
   b. Develop weekly lesson outlines and daily teaching plans which include:
      (1) performance objectives for each lesson
      (2) recent technical information and improved practices
      (3) educational experiences to be provided (field trips, films, specimens, demonstrations, etc.)
      (4) student learning experiences
      (5) interest techniques to motivate students
      (6) Evaluation procedures to be used in measuring student progress.
   c. Develop or secure modern and technical instructional materials needed.
3. Demonstrate effective teaching practices identified by Rosenshine and Furst, Dunkin and Biddle, Cruickshank, Medley and others.
4. Provide for students' agricultural experience (SAE) and to instruct and supervise the students in keeping complete, accurate records of their cooperative on-the-job experience.
4. Conduct supervisory visits and guide students in expanding their supervised agricultural experience programs.
6. Prepare a planned program of instruction for the extended service time during the summer months of employment.
7. Provide instruction and implement state and national safety regulations for laboratory experiences.
8. Provide instruction in leadership development.
9. Direct students in applying problem solving and critical thinking skills.
10. Utilize the Principles of Learning.
11. Direct student learning in laboratory experiences.
12. Guide students' supervised study period.
13. Conduct effective group discussions.
14. Develop complete instructional unit plans that possess meaning, organization, and structure.
15. Provide reward (reinforcement) techniques which promotes student learning.
16. Provide individualized instruction.
17. Provide information on educational and career opportunities.
18. Evaluate student performance.
19. Plan instructional activities that will enhance a greater understanding of and appreciation for cultural diversities.
20. Provide instruction and leadership for the FFA organization.

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Abilities, Knowledge, Skills, and Attitudes Required By Agriculture Teachers To Perform As A

Program Developer

1. Plan the total instructional program for which responsible.
2. Conduct surveys of the industry related to the program of instruction to determine future employment opportunities.
3. Prepare task analysis studies to determine the competencies required by those persons entering employment.
4. Survey local student population to determine interest and aptitude for entry into employment in the industry related to the program of instruction.
5. Plan the total program in terms of the needs of the students and the industry.
6. Provide a program to inform the community of activities, and students' progress.
7. Cooperate with the administration and other faculty members in developing and achieving the goals of the total school system.
8. Develop program goals and objectives.
9. Develop a course of study and units of instruction.
10. Promote the program through presentations, brochures, displays, and prepare news releases and articles concerning the program.
11. Obtain community feedback about the program to enhance the quality of the program.
12. Identify the need for, plan, and conduct programs for adults in the community.
13. Visit prospective students and parents to describe the program.
14. Determine trends and recent developments in the community with regard to agriculture issues.
15. Develop a philosophy and program objectives for the department.

TORRES AND GARTON, 1991

Abilities, Knowledge, Skills, and Attitudes Required By Agriculture Teachers To Perform As An

Administrator

1. Organize and meet with the local advisory committee for the Agricultural Education Program.
2. Coordinate the Agricultural Education Program with the activities of related agricultural industries in the community.
3. Conduct and incorporate various FFA activities into the program.
4. Maintain department facilities and equipment.
   a. Keep the classroom and laboratory facilities neat and orderly.
   b. Maintain an inventory of tools, equipment, instructional materials, and supplies.
   c. Arrange for the maintenance, repair and replacement of the tools and equipment.
   d. Develop a budget each year to be submitted to the school administration.
5. Prepare and submit all departmental reports on time to the local district and the state department of education.
6. Assist in the school program of placement and follow-up students in the occupations for which they have been prepared.
7. Maintain records of student evaluations, dep rtmental records, and students supervised agricultura. experience programs.
8. Arrange student transportation for all planned off-campus student activities.
9. Insure that facilities and equipment meet all current state and federal safety regulations.
10. Arrange facilities and equipment with consideration given to effective teaching, class control, safety and economy.
11. Store supplies and equipment in a systematic and safe manner.
12. Maintain an inventory of supplies and equipment with service and financial records.
13. Administer, supervise and coordinate all program activities.
14. Work with the principal and superintendent on school policy and other matters.

Abilities, Knowledge, Skills, and Attitudes Required By Agriculture Teachers To Perform As A

Decision Maker / Problem Solver

1. Recognize and make provisions for individual student learning and situational differences.

2. Possess a general knowledge of the developmental needs of students, an awareness of his or her own needs, and sensitivity to the moment-to-moment contexts.

3. Provide accommodations for special needs students.

4. Listen to colleagues and help facilitate the problem solving process by helping them view possible alternatives.

5. Be involved on a cooperative basis with the total school and the community in programmatic decisions.

6. Develop the ability to see a problem from the students' viewpoints as well as their own, taking into consideration all of the factors that come into focus from both perspectives.

7. Constantly evaluate the results of all decisions and thus proved data for future ones.

8. Be aware of the moment-to-moment context that is shared with students as well as the separate contexts within which the teacher and each pupil function.

9. Be able to spontaneously sort and evaluate accumulative data about students, themselves, and the interdependent influences in the total ecological context.

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Abilities, Knowledge, Skills, and Attitudes Required By Agriculture Teachers To Perform As An

Understander of the Learner

1. Establish and maintain student and parent relationships with the teacher.
2. Recognize when unexplained changes occur in students.
3. Recognize learning styles and personality styles of the students.
4. Analyze inherent strengths and weaknesses of students and seek to capitalize on strengths and develop areas where students are weak.
5. Gather student data by formal and informal methods.
6. Use student and parent conferences to help meet students needs.
7. Use staff conferences with colleagues to identify and meet student needs.
8. Gain first hand knowledge about pupils, parents, and the relationship that exists between them.
9. Understand the multicultural contexts and develop the skills and attitudes needed for teaching in a pluralistic society.
10. Advise individual students on a regular basis and assist those with special educational needs to obtain additional assistance from qualified school personnel.

Abilities, Knowledge, Skills, and Attitudes Required By Agriculture Teachers To Perform As A

Professional and Scholar

1. Be an active member and should participate in local, state, and national professional teacher organizations.
2. Participate in professional and technical improvement programs and activities appropriate for the program area.
3. Participate in the activities of other agricultural organizations in the community.
4. Develop an active personal philosophy of education and agricultural education.
5. Participate in the local school program.
6. Engage in in-service professional development activities.
7. Identify and integrate into teaching new issues, practices and technologies relevant to the program.
8. Possess a body of general knowledge which might be expected of a well educated individual.
9. Possess an understanding of research to the degree that one might be an effective consumer of research.
10. Work with faculty member on committees, at faculty meetings, at school activities, and in other situations.

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Abilities, Knowledge, Skills, and Attitudes Required By Agriculture Teachers To Perform As A

Role Model

1. Possess optimistic views and maintain enthusiasm for the subject content and teaching.

2. Possess a positive self-concept or view of self, provides the confidence and security to deal vigorously with life, and translates a positive feeling toward others.

3. Encourage trust and openness in students.

4. Possess the qualities of professionalism and leadership.

5. Help students develop positive attitudes, ambitions, moral and physical standards and other basic values that are of concern to students, parents, and the general public.

6. Stimulate interest in learning, being a well educated person, and a productive citizen.

Abilities, Knowledge, Skills, and Attitudes Required By Agriculture Teachers To Perform As A

Disciplinarian

1. Conduct a well managed class through:

   (1) motivation of students
   (2) firm, but fair classroom practices
   (3) the use of well developed lesson plans
   (4) planned student participation in a variety of educational experiences.

2. Understand each student's self-perception.

3. Classroom management techniques should reflect the teacher's style and needs.

4. Establish a learning environment in which the student has freedom to learn and to choose and yet one in which there is control.

5. Assist students in developing self discipline.

6. Decide which discipline approach to use in a specific situation.

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THE CURRICULUM

In developing a preservice teacher curriculum, one must be cognitive of the many factors that influence the content of the curriculum. The curriculum must be such that efforts are made to address the roles of the teacher, program accreditation by organizations such as NCATE and NASDTEC, certification of teachers, and time restraints.

There are several sources available that help guide the preservice teacher curriculum. Sources such as National Council for Accreditation of Teacher Education (1990), NCATE; National Association of State Directors of Teacher Education & Certification (1989), NASDTEC; state standards, if available; and the Standards for Quality Vocational Programs in Agriculture/Agribusiness Education (1977) must be carefully reviewed as the curriculum is developed.

NCATE states that the role of the teacher education unit is to ensure "that its professional education programs have adopted a model(s) that explicates the purposes, processes, outcomes, and evaluation of the program" (p. 45). NCATE further states that the curriculum should link general education, specialty studies, professional studies, and clinical & field-based experiences to support the preparation of competent professional educators.

The general education component, as suggested by NCATE, represents courses and experiences that include theoretical and practical knowledge gained from studies in communications, mathematics, science, history, philosophy, literature and the arts. The specialty studies component represents courses and experiences

that includes academic, methodological, and clinical knowledge necessary for professional competence in teaching or other professional education assignments.

The professional studies component prepares preservice teachers to work effectively in their specific educational roles. Courses and experiences include knowledge about professional education and relates it to the realities of practice in schools and classrooms. This component further includes knowledge about the social, historical, and philosophical foundations of education; theories of human development and learning; research and experience based principles of effective practice; impact of technology and societal changes on schools; evaluation, inquiry, and research; and educational policy. NCATE Standards advocate that this component should provide knowledge about the appropriate skills in learning theory, educational goals and objectives, cultural influences on learning, curriculum planning and design, instructional techniques, planning and management of instruction, design and use of evaluation and measurement methods, classroom and behavior management, and should incorporate multicultural and global perspectives.

The final component of the NCATE Standards, clinical and field-based experiences, should provide preservice teachers with opportunities to observe, plan, and practice in a variety of settings appropriate to the roles that they are preparing. NCATE states that student teaching should last the minimum of 10 weeks.

NASDTEC (1989) divides the curriculum into general education, professional education, and teaching majors standards. The

standards offer the following recommendations for the general education component: develop process skills of analysis, synthesis, and evaluation essential to understanding intellectual ideas and principles; develop an appreciation of the arts; develop competence in written and oral communication skills; develop the ability to use basic mathematical properties, processes, and symbols; require study of the historical and cultural values, customs, and social institutions; and study in the disciplines in the arts, humanities, natural sciences, and the social sciences.

NASDTEC, with regard to the professional education of teachers, advocates that the prospective teacher complete a program that provides for the development of insights into child and adolescent psychology; the teaching/learning process; the social interactive process of the classroom, school, and community; the methods and materials of instruction; and the broader problems of the profession as they relate to society and the function of the school.

The third and final category of the NASDTEC recommendations concerning the teacher preparation curriculum addressed requirements for each specialty area. The following recommendations by NASDTEC address the specific standards for the preparation of teachers in agriculture. Teachers graduating from programs accredited by NASDTEC should be able to:

1. Demonstrate competence in production agriculture.
2. Demonstrate competence in understanding the biological, physical, and applied sciences as the relate to agriculture.

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3. Demonstrate competence in understanding the essentials of production agriculture and their relationship to the agribusiness industry.

4. Demonstrate competence and experience in plant and soil science and technology.

5. Demonstrate competence and experience in animal science and technology.

6. Demonstrate competence and/or experience in agribusiness management and technology.

7. Demonstrate competence and experience in agricultural mechanics and technology.

8. Demonstrate competence in understanding one or more of the following specialized occupational areas: (1) production and marketing, (2) agribusiness management, (3) equipment and supplies, (4) products, (5) ornamental horticulture, (6) resources, (7) natural resource management, (8) environmental development, and (9) forestry.

9. Demonstrate competence and experience designed to develop skills necessary for establishing agricultural youth organizations as a means of teaching leadership skills and group cooperation.

10. Demonstrate competence and experiences designed to develop the ability to use appropriate occupational skills while working with students and adults in Supervised Agricultural Experience Programs.

The Ohio Standards For Teacher Education and Certification (1987) addresses the areas of general education, professional education, and specialty content in much the same manner as NCATE and NASDTEC. The Ohio Standards are more specific with regard to the number of minimum hours (semester) required to receive a Baccalaureate Degree from an approved program. The Ohio Standards state that preservice teachers curriculum should include at least thirty semester hours of studies in humanities, mathematics, natural sciences, and social sciences. The professional education component should include a minimum of twenty-four semester hours of

course work and clinical and field-based experiences designed for teaching agriculture. The final curriculum component, technical education in agriculture, should include a minimum of forty-five semester hours of technical course work and two years of recent, related work experience in the teaching area of agriculture or a directed occupational experience under the supervision of a vocational teacher educator.

Recognizing that there is a general consensus between the three accrediting/approval agencies (NCATE, NASDTEC, and Ohio Standards) as to what should be included in the curriculum, the problem arises as to how much course work in each component of the teacher preparation curriculum should be included in preparing teachers of agriculture. The Ohio Standards is the only council that addressed this concern in its recommendations. Crunkilton and Hemp (1981) have addressed this issue and suggested that the following curriculum percentages provides for adequate preparation for teachers of agriculture/agribusiness.

General Education.....20 - 30 %

Professional Education .....20 - 30 %

Technical Agriculture.....20 - 40 %

Electives.....10 %

In developing the curriculum for the preparation of teachers in agriculture, it is helpful to utilized as many of the recommendations and guidelines as suggested by the three accrediting/approval agencies as possible. Utilizing these recommendations as guidelines for selecting the course of study for the general education, professional education, and specialty

content area and considering the role statement of the agriculture teacher, a curriculum for the preparation of teachers of agriculture can be developed. In order to combine the recommendations from the previous sources, a template is required. Cruickshank's modal curriculum (Cruickshank, 1985) serves as a suitable template for identifying the proposed course of study for teachers of agriculture. The following curriculum is recommended for the preparation of agriculture teachers (Tables 1 and 2).

General Education

Inclusion of the general education curriculum in the preparation of teachers has been supported by several authors (Conant, 1963; Silberman, 1970; Howsam et al., 1976; Scannell, et al., 1983; and Holmes Group, 1986). NCATE recommends a general education curriculum that includes a well-planned sequence of courses and experiences. NCATE further recommends that general education courses include "theoretical and practical knowledge gained from studies in communications, mathematics, science, history, philosophy, literature, and the arts" (p 46). NASDTEC recommends that the general education component provide "the knowledge, skills, understanding, and appreciations associated with a well-educated, sensitive individual" (p 11). Crunkilton and Hemp (1981) suggested that 20 to 30 percent of a teacher preparation curriculum in agriculture/agribusiness should be devoted to general education. Consequently, the proposed general education curriculum consists of 39 semester hours of course work distributed among the areas of humanities (6 hours); social sciences (6 hours); natural

science (9 hours); communication (9 hours); and mathematics, computer science, and statistics (9 hours). Some of these courses may also function as "complementary knowledge" or knowledge which complements the teaching of agriculture and gives meaning to the general education component (Smith, 1980; and Miller, 1988).

Content for the Teaching Specialty

Technical Agriculture

The technical agricultural curriculum will include 38 semester hours and is designed to prepare and give practical experience in the specialty of agriculture which serve as a basis for agricultural education. Teacher educators have agreed that the preparation of teachers in the subject content they will teach is important (Conant, 1963; and Cruickshank, 1990) and that prospective teachers must also study pedagogy of the subject (Holmes Group, 1986; and Raven, 1989). Courses in this area are primarily considered introductory level courses and are administered through the College of Agriculture. In order to meet NASDTEC Standards (1989) with regard to agriculture, courses shall include the areas of agricultural mechanization, agronomy, animal science, horticulture/forestry, agricultural economics, and agribusiness.

Professional Component for Agriculture

In compliance with NASDTEC and NCATE standards and the role statement specified, preservice teachers will be required to complete course work that deals with the professional component of

agricultural education. These courses consist of 16 semester hours and will include the following courses: foundations of agricultural education; early field experience; methods of teaching agriculture; laboratory teaching; program planning and curriculum development; teaching agricultural management and supervised experience programs; and teaching of agriscience and agricultural literacy. Courses in agricultural education have been weighted heavily with emphasis on methods of teaching different areas of agriculture at the recommendation of the National Academy of Sciences Committee on Agricultural Education (1988).

The university's agricultural education department will be responsible for the preparation of preservice teachers in the professional component for agriculture. Given this, the following is a list of courses recommended with brief descriptions:

Foundations of Agricultural Education (1 hour) - Course which will serve as an introduction to teaching agriculture. The course will include content in the history, philosophy and purpose of agricultural education. The course will seek to encourage students to explore the role of the agriculture teacher.

Early Field Experience (2 hours) - Course will be operated on an independent study bases. Course will include observing and working with agriculture teachers in order to assess the nature of agricultural education and the roles conducted by the agriculture teacher. Thirty five clock hours will be required to complete each of the two credit hours for a total of 70 clock hours. Two credit hours will be completed by the time that the student has complete one-half of the course credits toward certification.

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Methods of Teaching Agriculture (4 hours) - An examination of the learning process with emphasis on planning for instruction and the use of appropriate methods for teaching agriculture. Course will include a two hour laboratory each week for microteaching and/or reflective teaching.

Program Planning and Curriculum Development (3 hours) - Content of the course will address the various requirements of the teacher as an administrator of planning instruction. This includes: assessing the instructional needs of students, developing a course of study, long range program plan, selecting and developing curricula, and unit and daily lesson planning.

Laboratory Teaching (2 hours) - Course will address the principles and practices in the design, delivery, and evaluation of learning in the agricultural laboratory. Laboratories to be included are: mechanics, horticulture, plant science, and animal science.

Teaching Agricultural Management and Supervised Experience Programs (2 hours) - Course content will address the methods and procedures used to teach principles of economics, management skills, and recordbook keeping. Also addressed will be the principles and procedures used in selecting, planning, conducting, and evaluating supervised agricultural experience programs for agriculture students.

Teaching of Agriscience and Agricultural Literacy (2 hours) - Addresses the requirements, procedures, and methods of teaching agriscience to both secondary and elementary students. Also includes various methods of teaching and procedures of

incorporating agricultural literacy into classrooms outside the agriculture classroom. The teaching of agriscience and agricultural literacy have been recommended by the National Academy of Sciences Committee on Agricultural Education (1988) and The Strategic Plan for Agricultural Education (1989).

Humanistic and Behavioral Studies

Course work is also know as foundational studies and will include 12 semester hours. Courses are intended to act as a bridge between general education and pedagogy (Cruickshank, 1985). Courses will include history of eduction, philosophy of education, educational psychology, educational sociology, and adolescent psychology.

Teaching and Learning Theory

Teaching and learning theory refers to what is known about teaching and learning (Cruickshank, 1990). Both NCATE, standard I.E. (p. 47), and NASDTEC, standard II (p. 12), call for course work in the area of teaching and learning theories. NCATE Standards (p. 48) have specifically recommended courses in the areas of individual learning needs and multicultural education. Consequently, the following courses (12 semester hours) are included in the curriculum: general teaching methods, psychology of learning, multicultural education, and education of the special needs students.

Practicum Experience

The practicum experience will consist of a pre-student teaching internship (5 semester hours) and student teaching (12 semester hours). The two practicum experiences will be conducted during the final two semesters prior to certification in conjunction with the professional component for agriculture courses utilizing the block concept (McCormick and Peterson, 1981). The pre-student teaching internship will be completed during the first five weeks of the seventh semester of an eight semester program. This internship will be followed by 10 weeks of course work concentrating on the professional component for agriculture. The student teaching component will be conducted during the final 12 weeks of the eighth semester or final semester before certification. This component will be preceded by four weeks of course work in the professional component for agriculture. In the semester system, organizing course work in conjunction with the two practicum experiences utilizing the block concept provides the best articulation of the teacher education program and reduces the amount of overlap (McCormick and Peterson, 1981).

Table 1.

General Education Curriculum For The Preparation Of Teachers Of Agricultural Education

Courses	* Roles addressed
General Education (39 Semester hours)	
Humanities (6 hours)	
Foreign Languages	F PS R U
Art	F PS R U
Music	F PS R U
Philosophy	F PS R U
Literature	F PS R U
Theater/Drama	F PS R U
Social Sciences (6 hours)	
American History	F PS R U
Political Science	F A PS R DM
Government	F A PS R DM
Psychology	F A PS DM U D
Sociology	F A PS DM U D
Rural Sociology	F A PS DM U D
Natural Science (9 hours)	
Chemistry	F PS R PD DM
Physics	F PS R PD DM
Botany	F PS R PD DM
Zoology	F PS R PD DM
Geology	F PS R PD DM
Biology	F PS R PD DM
Communication (9 hours)	
Written Communications	F A PS R PD
Oral Communications	F A PS R PD D
Leadership Skills	F A PS R PD DM U D
Mathematics, Computer Science, Statistics (9 hours)	
Algebra	F A PS R PD DM
Calculus	F A PS R PD DM
Computer Science/Application	F A PS R PD DM
Statistics	F A PS R PD DM

* Roles Addressed

F = Facilitator of Learning
A = Administrator
PS = Professional and Scholar
R = Role Model
PD = Program Developer
DM = Decision Maker / Problem Solver
U = Understander of the Learner
D = Disciplinarian

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Table 2.

Professional Education Curriculum For The Preparation Of Teachers Of Agricultural Education

Courses	* Roles addressed
Content for the Teaching Specialty (54 Semester hours)	
Technical Agriculture (38 hours)	
Agricultural Mechanization (7)	F A PS R PD DM
Agronomy (8)	F A PS R PD DM
Animal Science (9)	F A PS R PD DM
Horticulture / Forestry (3)	F A PS R PD DM
Agricultural Economics (8)	F A PS R PD DM
Agribusiness (3)	F A PS R PD DM
Professional Component for Agriculture (16 hours)	
Foundations of Agricultural Education (1)	F A PS R PD DM
Early Field Experience (2)	F A PS R PD DM U D
Methods of Teaching Agriculture (4)	F A PS R PD DM U D
Laboratory Teaching (2)	F A PS R PD DM U D
Program Planning and Curr. Devel. (3)	F A PS PD DM U
Teaching Agricultural Management and Supervised Experience Programs (2)	F A PS R PD DM U D
Teaching of Agriscience and Ag. Literacy (2)	F A PS R PD DM U D
Humanistic and Behavioral Studies (12 hours)	
History of Education	F A PS PD DM
Philosophy of Education	F A PS PD DM
Educational Psychology	F A PS PD DM U D
Educational Sociology	F A PS PD DM U D
Adolescent Psychology	F A PS PD DM U D
Teaching and Learning Theory (12 hours)	
General Teaching Methods	F A PS R PD DM U D
Psychology of Learning	F A PS R PD DM U D
Multicultural Education	F A PS R PD DM U D
Education of the Special Needs Students	F A PS R PD DM U D
Practicum Experience (17 hours)	
Pre-student Teaching Internship (5 weeks)	F A PS R PD DM U D
Student Teaching (12 weeks)	PS R PD DM U D

* Roles Addressed:

F = Facilitator of Learning
A = Administrator
PS = Professional and Scholar
R = Role Model
PD = Program Developer
DM = Decision Maker / Problem Solver
U = Understander of the Learner
D = Disciplinarian

TORRES AND GARTON, 1991

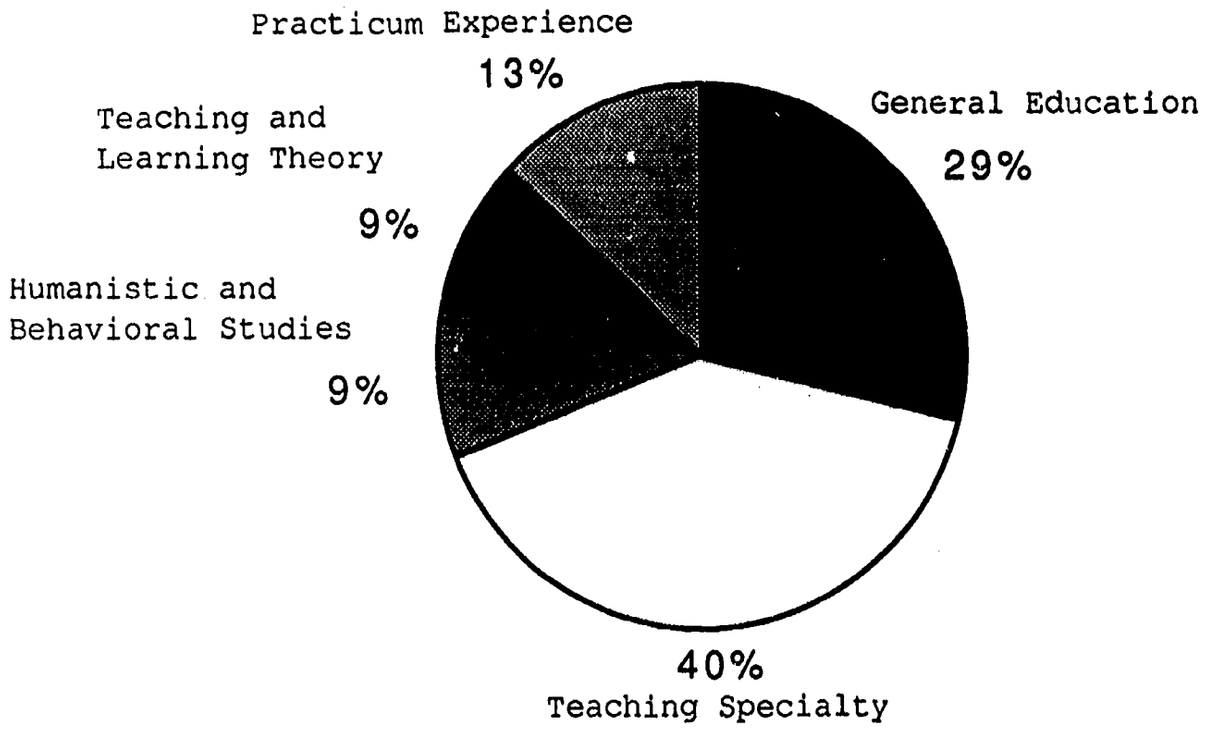

Figure 1. The Proposed Agricultural Teacher Education Curriculum Components and Percentages

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INSTRUCTION

If the developed curriculum has been identified as one that will properly prepare the preservice agriculture teacher, the next concern is the instructional alternatives. Cruickshank (1985) identified twenty-three selected instructional alternatives which may be used by teacher educators whereby teaching abilities, concepts, skills and attitudes can be learned.

Given the many alternatives available, it then becomes a dilemma in selecting the appropriate instructional alternative in delivering topics addressed in the curriculum. Tobias (1982) recommends selecting the most effective instructional alternative such that the students will be stimulated "to actively attempt to comprehend the material, organize what is learned with what has been learned previously, and relate it to the...rior experience" (p. 6).

Both NCATE AND NASDTEC standards address the topic of instruction and provide some guidance in selection of alternatives. NCATE (1990) requires that instruction by faculties be congruent in content and process with the best practice and current with established research. Additionally, NCATE (1990) requires faculty instruction to provide students with systematically varied models of instruction. More specifically, NCATE (1990) advocate that faculties provide opportunities for education students to observe, plan and practice in a variety of settings when conducting clinical and field-based experiences. NASDTEC (1989) requires "...institutions to provide evidence the faculty use effective instructional methods" as well as both real and simulated

experiences in clinical and laboratory contexts. Moreover, NASDTEC (1989) requires faculties to "...model in their teaching those methods which they espouse" (p. 10).

With the aid and direction provided by NCATE, NASDTEC and Tobias, the dilemma of selecting instructional alternatives can be simplified. In addition, it is useful to utilize Cruickshank's (1991) framework to classify instructional alternatives as a function of types of experiences involved (concrete, vicarious, and abstract) and use of reality (real or modeled). This framework is illustrated in Figure 2. Using this same framework, the various instructional alternatives identified by Cruickshank (1985) can be classified into one of the five categories - concrete real, concrete modeled, vicarious real, vicarious modeled or abstract (Figure 3).

With the exception of the professional component of the preservice curriculum, agricultural teacher educators have little to no influence over the instructional alternatives used in delivering the curriculum. What little influence they may have on instructional alternatives can be set forth only by example. In the College of Agriculture, agricultural educators can be proactive and encourage their colleagues to increase the number of instructional alternatives utilized. Cross-referencing Tables 1 and 2 with Figure 2 aids in identifying instructional alternatives for the preservice curriculum (Table 3).

Although it is not possible to dictate the instructional alternatives for all the courses in the preservice curriculum, it is possible to suggest alternatives for courses in the professional

component for agriculture and practicum experience in the curriculum.

Foundations of Agricultural Education - audiovisuals, readings, displays exhibits, lecture, case studies, observations, discussion, and reports and writings

Early Field Experience - teaching, observation, and demonstrations

Methods of Teaching Agriculture - microteaching, simulations, reflective teaching, role playing, problem solving, audiovisuals, demonstrations, case studies, readings, lecture, discussions, and programmed instruction

Program Planning and Curriculum Development - problem solving, audiovisuals, readings, lecture, discussion, and reports and writings

Teaching Agricultural Management and Supervised Experience Programs - microteaching, simulations, reflective teaching, role playing, problem solving, audiovisuals, demonstrations, case studies, readings, lecture, discussion, and programmed instruction

Teaching of Agriscience and Agricultural Literacy - microteaching, simulations, reflective teaching, role playing, problem solving, audiovisuals, demonstrations, case studies, readings, lecture, discussion, and programmed instruction

Pre-Student Teaching Internship - teaching, observation, and demonstrations

Student Teaching - teaching, observation, and demonstrations

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CONTEXT OF EXPERIENCE (REAL OR MODELED)

	REAL REALITY IS USED	MODELED A MODEL OF REALITY
CONCRETE DIRECT, FIRST-HAND EXPERIENCE	Field experience wherein the teacher education student learns the ability concretely in situ. - Teaching	Laboratory experience wherein the teacher education student learns the ability while he/she engages with a model of reality. - Microteaching - Reflective Teaching - Simulators - Simulation games - Role Playing/Skits
VICARIOUS INDIRECT, SECOND-HAND EXPERIENCE	Field or Classroom experience wherein the teacher education student learns the ability vicariously from reality or a recording of reality. - Observing teacher - Protocols - Documentary films - Case Studies - Still Pictures - Books - Non-fiction tape recordings	Classroom experience wherein the teacher education student learns the ability vicariously from a recording of a model of reality. - Film, fiction - Book, fiction
ABSTRACT	Classroom experiences wherein the teacher education student learns the ability abstractly with little or no use of reality or a model of it. Emphasis is mainly on verbally communicating the concept, skill or attitude. - Academic contests or competitions, brainstorming, case studies, debates, discussions, lecturing, oral reports, projects, recitations, team learning, etc.	

D. R. Cruickshank, The Ohio State University

Figure 2. **Instructional Alternatives Whereby Teaching Abilities, Concepts, Skills, and Attitudes Can Be Learned**

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USE OF REALITY

	REAL	MODELED
CONCRETE	student teaching pre-student teaching early field experience	microteaching reflective teaching simulations role playing problem solving interactive video experiments games
VICARIOUS	audiovisuals protocols demonstrations observations displays and exhibits	audiovisuals readings displays and exhibits
ABSTRACT	lecture discussion debates programmed instruction reports and writings	

Figure 3. **Specific Methods Suited To Instructional Alternatives**

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Table 3.

Instructional Alternatives For The Preservice Curriculum Of Teachers Of Agriculture

Courses	* Instructional Alternatives	** Roles of the Teacher
General Education (39 Semester hours)		
Humanities (6 hours)		
Foreign Languages	CM VR VM AB	F PS R U
Art	VR VM AB	F PS R U
Music	VR VM AB	F PS R U
Philosophy	AB	F PS R U
Literature	VM AB	F PS R U
Theater/Drama	CR CM VR VM AB	F PS R U
Social Sciences (6 hours)		
American History	VR AB	F PS R U
Political Science	VR AB	F A PS R PD DM
Government	VR AB	F A PS R PD DM
Psychology	VR AB	F A PS DM U D
Sociology	VR AB	F A PS DM U D
Rural Sociology	VR AB	F A PS DM U D
Natural Science (9 hours)		
Chemistry	CM VR VM AB	F PS PD DM
Physics	CM VR VM AB	F PS PD DM
Botany	CM VR VM AB	F PS PD DM
Zoology	CM VR VM AB	F PS PD DM
Geology	CM VR VM AB	F PS PD DM
Biology	CM VR VM AB	F PS PD DM
Communication (9 hours)		
Written Communications	CM VR AB	F A PS R PD
Oral Communications	CM VR AB	F A PS R PD D
Leadership Skills	CM VR AB	F A PS R PD DM U D
Mathematics, Computer Science, Statistics (9 hours)		
Algebra	AB	F A PS R PD DM
Calculus	AB	F A PS R PD DM
Computer Science/Application	CM VR AB	F A PS R PD DM
Statistics	CM VR AB	F A PS R PD DM

* Instructional Alternatives:
- CR = Concrete Real
- CM = Concrete Modeled
- VR = Vicarious Real
- VM = Vicarious Modeled
- AB = Abstract

** Roles of the Teacher:
- F = Facilitator of Learning
- A = Administrator
- PS = Professional and Scholar
- R = Role Model
- PD = Program Developer
- DM = Decision Maker / Problem Solver
- U = Understander of the Learner
- D = Disciplinarian

Table 3. Instructional Continued

Courses	* Instructional Alternatives	** Roles of the Teacher
Content for the Teaching Area (54 Semester hours)		
Technical Agriculture (38 hours)		
Agricultural Mechanization (7)	CM VR AB	F A PS R PD DM
Agronomy (8)	CM VR AB	F A PS R PD DM
Animal Science (9)	CM VR AB	F A PS R PD DM
Horticulture / Forestry (3)	CM VR AB	F A PS R PD DM
Agricultural Economics (8)	CM VR VM AB	F A PS R PD DM
Agribusiness (3)	CM VR VM AB	F A PS R PD DM
Professional Component for Agriculture (16 hours)		
Foundations of Agricultural Education (1)	VR AB	F A PS R PD DM
Early Field Experience (2)	CR VR	F A PS R PD DM U D
Methods of Teaching Agriculture (4)	CM VR VM AB	F A PS R PD DM U D
Laboratory Teaching (2)	CM VR VM AB	F A PS R PD DM U D
Program Planning and Curriculum Development (3)	CM VM AB	F A PS PD DM U
Teaching Agricultural Management and Supervised Experience Programs (2)	CM VR VM AB	F A PS R PD DM U D
Teaching of Agriscience and Agricultural Literacy (2)	CM VR VM AB	F A PS R PD DM U D
Humanities and Behavioral Studies (12 hours)		
History of Education	VM AB	F A PS PD DM
Philosophy of Education	VR VM AB	F A PS PD DM
Educational Psychology	VR VM AB	F A PS PD DM U D
Educational Sociology	VR VM AB	F A PS PD DM U D
Adolescent Psychology	CM VR VM AB	F A PS PD DM U D
Teaching and Learning Theory (12 hours)		
General Teaching Methods	CM VR VM AB	F A PS R PD DM U D
Psychology of Learning	CM VR VM AB	F A PS R PD DM U D
Multicultural Education	CM VR VM AB	F A PS R PD DM U D
Education of the Special Needs Students	CM VR VM AB	F A PS R PD DM U D
Practicum Experience (17 hours)		
Pre-student Teaching Internship (5 weeks)	CR VR	F A PS R PD DM U D
Student Teaching (12 weeks)	CR VR	F A PS R PD DM U D

* Instructional Alternatives:
- CR = Concrete Real
- CM = Concrete Modeled
- VR = Vicarious Real
- VM = Vicarious Modeled
- AB = Abstract

** Roles of the Teacher:
- F = Facilitator of Learning
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RESOURCES AND FACILITIES

Proper resources and facilities are required in education if the desired curriculum is to be taught with a variety of instruction alternatives. The facilities needed to operate a teacher education program in agricultural education have similar but yet unique characteristics from other teacher education programs. In many universities and colleges the agricultural education department is located within the College of Agriculture and not the College of Education. In would seem appropriate that the agricultural education department be located in the College of Agriculture due to the interdependence with the other agricultural academic departments.

Peters and Moore (1984) reported that agricultural education departments received stronger support from Colleges of Agriculture than Colleges of Education. Additionally, agricultural education departments housed in the Colleges of Agriculture have allowed for more flexible funding, especially at Land-Grant universities. Raven (1989) noted that agricultural education departments in Colleges of Agriculture at Land-Grant universities are eligible for additional federal funding through agricultural experiment stations.

Agriculture teacher educators need to be concerned with the specific resources and facilities and avoid the temptation to accept only those that can readily be arranged, but not justified. NCATE (1990), NASDTEC (1989) and the Ohio Standards (1987) recognize the importance of this component in the teacher education program.

NCATE (1990) identifies eighteen standards to be met with regard to the resources and facilities of a teacher education program. The standards specifically address personnel resources, funding resources, physical facilities, and library, equipment, materials, and supplies. NASDTEC (1989) addressed four standards for accreditation that programs must comply with in order to conduct programs for the preparation of teachers. While not as elaborate as NCATE in specifying criteria for resources and facilities, NASDTEC indicates requirements that include facilities, equipment, and materials needed for conducting teacher education programs. Ohio Standards (1987) stipulate the need for a library, laboratories for each training field, a teaching practice laboratory and a media center which includes educational media and materials as well as equipment for preparing instruction materials. Additionally, The Strategic Plan For Agricultural Education (1990) calls for teachers to use modern equipment and facilities in their instructional programs.

Similar to the instructional alternatives, agriculture teacher educators have little to no influence over the resources and facilities outside their department. Thus, this proposed teacher eduction program in agricultural education will limit resources and facilities to those needed for the professional education courses taught within the agricultural education department.

In recommending facilities for an agricultural education program, the following will serve as a framework for organizing the recommendations: instructional facilities, support facilities, instructional equipment, and off-campus facilities. The curriculum and instructional alternatives previously proposed for in the

agricultural teacher eduction program necessitates the need for specialized facilities in the four aforementioned categories as influenced by the roles of the teacher of agriculture (Table 4).

Instructional Facilities (Table 4 and Figure 4)

The instructional facilities will include a classroom modeled similar to those found in traditional high school agricultural education programs. Equipment requirements in the classroom would include: student tables and chairs, teacher podium, projection screens, chalkboards, audio-visual equipment, storage cabinets, dark shades, and bulletin boards. Also needed are, teaching laboratories to conduct methods courses in classroom, agriculture mechanics, and horticulture instruction with enough room for video-taping equipment. The agriculture mechanics and horticulture laboratories will be fully equipped with the latest technology available to provide a full range of instructional activities. The recommendation of these facilities are quite extensive and would be very costly for exclusive utilization in teacher training. Consequently, a reciprocal agreement would be negotiated to allow the departments of agricultural engineering and horticulture to utilize these facilities along with their own facilities in carrying out instructional activities in the undergraduate curriculum for teacher preparation.

Support Facilities (Table 4 and Figure 4)

A conference room, media/resource center, microcomputer laboratory, and material production center will be fully equipped and made available for faculty and student access. Faculty offices will be provided that will be conducive for carrying out planning, research and student advising as well as foster the general welfare

of the faculty. Graduate students who are on appointment will also be furnished will offices. Adequate space will be provided for secretarial staff to preform the assigned tasks. Both faculty and staff will be provided with up-to-date professional equipment (e.g., computers and peripherals, telephones, a fax machine, telecommunication peripherals, etc.).

Although agricultural educators have little to no control over the actual operations of the agricultural library, which can be assumed to be located within the College of Agriculture, influence can be exerted into the references and periodicals made available through these facilities.

Instructional Equipment (Table 4)

The following instructional equipment will be required for departmental use: cassette tape recorders, carousel slide projectors, overhead projectors, interactive video system, microcomputers, 16mm movie projector, photo copy machine, video monitors, video cassette camera, and editing equipment.

Off-Campus Facilities (Table 4)

The final category addresses the need for secondary programs that are suitable for placement of early field experience students, pre-student teachers, and student teachers. High school agriculture programs are not located in every school district. Thus, distance to an agriculture program should not be the major criteria for placement of a student. The quality of the cooperating teacher, program and facilities will be the primary factor in placement. Consequently, agriculture teacher educators need to focus their efforts on locating quality secondary programs which will meet off-campus facility requirements.

Table 4.

Resources and Facilities Required In The Agricultural Education Department For The Preparation Of Teachers

Facilities/Equipment	* Roles Addressed
Instructional Facilities	
Classroom	F A PS R PD DM U D
Instructional laboratories:	
Teaching laboratory	F A PS R PD DM U D
Agricultural mechanics/shop	F A PS R PD DM U D
Horticulture/Greenhouse	F A PS R PD DM U D
Support Facilities	
Conference room	A PS R PD DM U
Media/Resource center	F A PS PD DM U
Study room	F PS PD DM U
Microcomputer laboratory	F A PS PD DM
Material production center	A PS PD
Faculty offices	A R
Graduate student offices	F PS R
Clerical/Secretarial offices	A
Storage	A
Agricultural library	F A PS R PD DM U
Instructional Equipment	
Computers and peripherals	F A PS PD DM U
Interactive video system	F A PS R PD DM U D
Overhead projectors	F A PS R PD DM U D
Slide projectors	F A PS R PD DM U D
Photo copy machine	A PD
Audio visual equipment	F A PS R PD DM U D
16mm movie projector	F A PS R PD DM U D
Cassette tape recorders	F A PS R PD DM U D
Chalkboards	F A PS R PD DM U D
Projection screens	F A PS R PD DM U D
Off-Campus Facilities	
High school/vocational school agriculture departments, instructors, and facilities	F A PS R PD DM U D

*Roles:
F = Facilitator of Learning
A = Administrator
PS = Professional and Scholar
R = Role Model
PD = Program Developer
DM = Decision Maker / Problem Solver
U = Understander of the Learner
D = Disciplinarian

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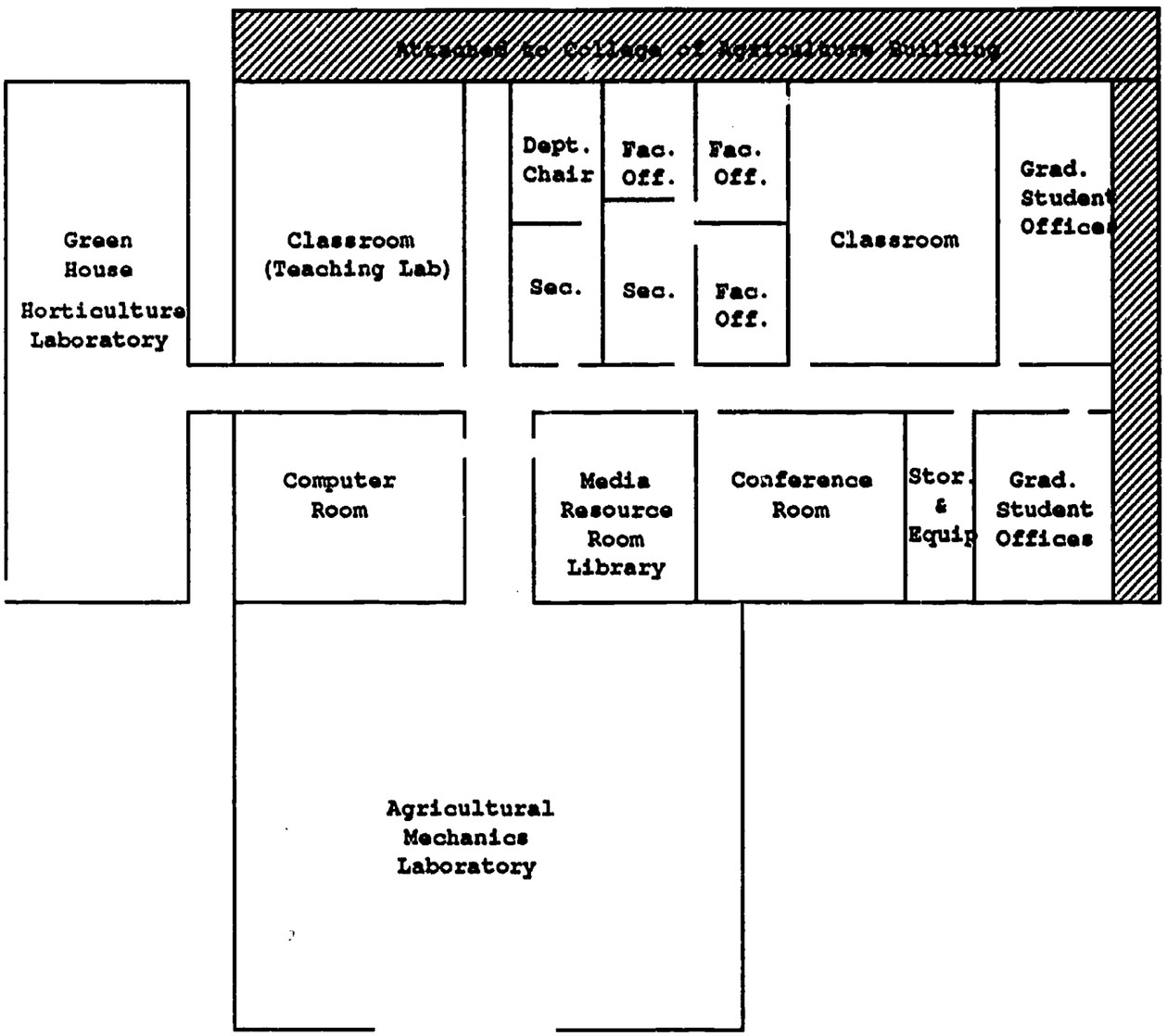

Drawing by Torres and Garton, 1991

Note: Drawing is not to scale.

Figure 4. **Proposed Agricultural Teacher Education Facility**

STUDENT SELECTION

There has been a multitude of concern expressed by the general public and teacher educators with regard to teachers graduating from teacher training programs who are weak in skills fundamental to teaching (Laman and Reeves, 1983). This concern of teaching quality has become a major educational concern in the United States (Nelson, 1985). Weaver (1979) provided a basis for this concern when he reported the consistently poor standing of teacher education students when compared to other college students on standards of academic achievement. Sykes (1983) found that education students tend to rank near the bottom, when compared to students majoring in other fields, on a variety of admission standards.

Institutions responsible for teacher training have been raising teacher admissions criteria in response to the criticism of the quality of teachers being graduated (Laman and Reeves, 1983). Laman and Reeves (1983) warned of the lack of consensus on the criteria being used in admitting candidates into the teacher education programs. They further reported that admission standards are criticized for being both lax and inappropriate with institutions accepting 90 percent of their applicants. Critics suggest that quantitative criteria are used too heavily and often evaluations are a one time event (Laman and Reeves, 1983).

Laman and Reeves (1983) reported the most commonly used criteria for admission into teacher preparation programs included grade point average (GPA), interviews, formal applications, physical exams, psychological exams, speech tests, written language tests, and standardized tests. These educators concluded that the

identification and utilization of criteria that could be used to predict teacher success would be more desirable than the current standards being used. With regard to the preparation of teachers in agriculture, Annis and Paul (1981) cam to similar conclusions as Laman and Reeves. They supported the concept that a department within a college could not require higher admission standards than those of the college. They further suggested that the selection process of teachers in agriculture must be guided by desired teacher characteristics.

Even with the suggestions, from educators and researchers, that the criteria commonly used to admit students into teacher preparation programs has little predictive value of teacher's effectiveness, accreditation and approval agencies still rely heavily on these standards. NCATE (1990, p.52) "encourages the recruitment of quality candidates and those quality candidates represent a culturally diverse population". NCATE requires an assessment system which includes:

(a) standardized basic skills proficiency tests,
(b) faculty recommendations,
(c) biographical information, and
(d) successful completion of prior college/university course for which at least a 2.5 grade point average on a 4-points scale.

NCATE (1990) recommends the use of a systematic process for monitoring the progress of education students from admission through completion of their professional education programs. Means of assessing this progress are to include, but not limited to the following:

(a) grade point average,
(b) observations,
(c) faculty recommendations,
(d) demonstrated competence in academic and professional work, and

(e) recommendations from the appropriate professionals in schools.

NASDTEC (1989) and The Ohio Standards (1987) also require the selection and retention of students into the teacher preparation program. These standards are based upon the assessment of selected student characteristics and performance qualities similar to NCATE. However, these two agencies were not as specific as NCATE as to what assessment procedures to use.

Attention must be given to the concerns regarding the selection of students into teacher preparation programs. As noted previously, these include the standards as indicated by the three accrediting organizations, and the roles of teachers of agricultural education in developing a system for the admission and retention of students in the agricultural teacher preparation program. The criteria for entry into the agricultural teacher preparation program and entry into the student teaching program in agriculture are outlined in Tables 5 and 6.

A student's admission into the teacher preparation program (table 5) will be considered when the prospective student has completed 65 of the 134 semester credit hours required for graduation. This will normally occur at the conclusion of a student's second year of enrollment at the university. Admission into the preparation program will be evaluated by a selection committee consisting of three to five faculty members appointed by the department chairperson. Admission will be based on the following standards: College grade point average will be used as an indicator of a well educated person and the student's scholar ability. Evidence of suitable attitudes and behavior towards teaching will be assessed from the student's early experience grade

and cooperating teacher's recommendation. College grades in communication courses and an admission interview will be used to assess the student's verbal and written communication skills. In analyzing the student's basic teaching skills and practices, the committee will evaluate the student's academic performance in the following two courses; introductory psychology and general methods. Evidence of the candidate's leadership skills and involvement in youth organizations will be assessed through a student's records, an application, and an interview with the committee. Basic skills that define a generally well educated person will be documented through the student's G.P.A. or standardized test. The final standard requires the completion of a minimum of 1,000 hours of agricultural work experience in an area of specialization.

A student's admission into the student teaching program in agriculture will have specific standards (table 6) with which the prospective teacher must comply. A minimum of a 2.5 accumulative G.P.A. is required to demonstrate that the teacher candidate is a well educated person and has demonstrated scholarly efforts. Evidence of effective teaching traits will be evaluated by the selection committee through the use of a work sample.

Work samples have not been commonly utilized in the selection of students into teacher eduction programs. Work samples are suggested because they appear to be one of the few valid means available for assessing a teacher's effectiveness. Utilizing teacher effectiveness traits identified by Rosenshine and Furst, Dunkin and Biddle, and Cruickshank as a standard for evaluating student's performance in a teaching situation makes it possible to

identify students who have an inherent ability to teach effectively.

Other criteria for admission to the student teaching program will include evidence of suitable attitudes and behavior towards teaching, working a minimum of a total of 2,000 hours of agricultural experience, and evidence of possessing effective teaching skills. The student's attitudes and behavior towards teaching will be assessed from their pre-student teaching performance, cooperating teacher's recommendation, and the selection committee's recommendation. Agricultural work experience will be assessed from the student's records documenting the experience hours. The final standard, evidence of effective teaching skills, will be assessed by the instructors of the specialty methods courses in cooperation with the selection committee utilizing the student's performance in specialty methods courses.

Table 5.

Standards For Entry Into The Teacher Preparation Program In Agriculture

Standard	Means of Assessment	* Roles of the Teacher
Minimum G.P.A. of 2.5 on all college course work	College transcripts	F A PS R DM U D
Evidence of suitable attitudes and behavior towards teaching	Early experience performance and cooperating teacher's recommendation	F A PS R PD DM U D
Evidence of adequate verbal and written communication skills	College grades in communication courses & admission interview	F A PS R DM
Evidence of basic teaching skills & practices	Academic performance in introductory psychology and general methods course	F A PS R DM U D
Evidence of leadership knowledge and skills	Application & Interview	F A PS R DM U
Evidence of basic skills	Either through college G.P.A. or standardized test	F A PS R DM U
Minimum of 1,000 hours of agricultural work experience	Student records documenting experience	F PS R DM
Involvement in youth organization	Student records documenting experience	F PS R DM U D

* Roles of the Teacher:

F = Facilitator of Learning
A = Administrator
PS = Professional and Scho ar
R = Role Model
PD = Program Developer
DM = Decision Maker / Problem Solver
U = Understander of the Learner
D = Disciplinarian

Table 6.

Standards For Entry Into The Student Teaching Program In Agriculture

Standard	Means of Assessment	* Roles of the Teacher
Minimum G.P.A. of 2.5 on all college course work	College transcripts	F A PS R DM U D
Evidence of effective teaching traits	Work Sample	F PS R PD DM U D
Evidence of suitable attitudes and behavior towards teaching	Pre-student teaching performance, cooperating teacher's recommendation and selection committee recommendation	F A PS R PD DM U D
Minimum total of 2,000 hours of agricultural work experience	Student record documenting experience	F PS R DM
Evidence of effective teaching skills	Performance in specialty methods courses as assessed by the course instructors in cooperation with the selection committee	F A PS R PD DM U D

* Roles of the Teacher:

F = Facilitator of Learning
A = Administrator
PS = Professional and Scholar
R = Role Model
PD = Program Developer
DM = Decision Maker / Problem Solver
U = Understander of the Learner
D = Disciplinarian

FACULTY SELECTION

The key to a successful preservice preparation program for teachers of agriculture is in the careful selection of quality faculty. Miller (1988) stated that the quality of an agricultural teacher preparation program is a direct reflection of the caliber of the faculty. Consequently, to have a successful teacher preparation program depends on the selection of the faculty.

Cruickshank (1990) characterizes the education professorate as hard working and dedicated to their teaching and advising. Faculty in teacher education programs, as stated by Howsam, et al (1976), should: 1) be a liaison between the institution and public education; 2) possess professional knowledge; 3) be an exemplar of excellent teaching; 4) have a broad view of the education process; 5) be able to link research to teaching; 6) be committed to the professional preparation of teachers; and 7) maintain a profound commitment to human rights.

McCormick (1985) stated that teacher education can only be as good as the undergraduate program. He also emphasized that agricultural teacher education programs should have the "...best qualified, most effective, most dedicated, and motivated teacher educators at the undergraduate level" (p.5). McCormick (1985) concluded that the prime component of the agricultural teacher education program is having competent personnel.

NCATE, NASDTEC, The Ohio Standards, and the Standards for Quality Vocational Programs in Agriculture/Agribusiness Education all recognize the importance of faculty selection and have made provisions for selection criteria. NCATE (1990) specifies the following criteria for the selection of faculty:

1. The composition of the faculty represents cultural diversity.

2. Faculty have earned the terminal degree or have exceptional expertise in their fields to qualify them for their assignments in professional education programs. They have formal advanced study or demonstrated competence through independent scholarly activities in each field of specialization that they teach.

3. Faculty view themselves as members of the training and research arms of the teaching profession.

4. Faculty with responsibility for supervision of school-based experiences have had training in supervision as well as professional experiences in the school setting in which that supervision takes place.

5. Part-time faculty meet the requirements for appointment to the full-time faculty.

6. Graduate students who are assigned to instructional roles are qualified in terms of formal study, experience, and training.

7. Cooperating teachers and other field-based supervisors have a minimum of three years of experience in the areas they are supervising and are certified for the areas in which they are teaching or working.

NASDTEC Standards (1989) include:

1. Faculty must have preparation and experience for their respective roles and responsibilities in teacher education programs.

2. The institution must provide evidence of faculty participation in activities designed to promote continuous professional development.

3. Institution should provide evidence that selection, retention, and promotion of personnel including the responsibilities that pertain to programs for the preparation of education personnel.

4. The same criteria for academic preparation, experience, and scholarly performance are used for appointing full-time and part-time faculty.

5. The institution provides evidence that clinical and field assignments are included in determining faculty load.

6. The institution provide evidence that faculty use effective instructional methods, educational technology, and measurement and evaluation procedures.

The Ohio Standards (1987) call for:

1. Faculty who have academic preparation appropriate to each teaching and supervisory assignment.

2. Faculty utilizing the knowledge base including research finding related to the knowledge, skills, attitudes, and values determined essential for effective practice.

3. Full-time faculty who possess the appropriate terminal degree and pattern of preparation for each certification program.

4. Faculty that possess at least three years of satisfactory and appropriate school experience.

5. Faculty that participate in meaningful onsite school experiences appropriate to teaching assignments.

6. Faculty shall be provided adequate time to do the following activities: 1) advise and counsel students; 2) work on various advisory, planning development, and evaluation committees; and 3) conduct research and write.

The Standard for Quality Vocational Programs in Agriculture/Agribusiness Education (1977) advocate the following standards for the agricultural education faculty:

1. Seventy-five percent of the agricultural education faculty have an earned doctorate degree; 100 percent have earned master's degrees in agricultural education or the equivalent.

2. All faculty meet requirements for certification to teach vocational agriculture/agribusiness, including at least three years of successful teaching experience in vocational agriculture/agribusiness in the area or areas in which the faculty member is providing leadership.

3. Members of the agricultural education faculty have twelve-month appointments.

4. Faculty members have shown evidence of achievement in research and writing as measured by publications and research projects.

5. Faculty members have demonstrated leadership roles and are participating in professional organizations and state and national professional improvement meetings.

6. A minimum of two FTE faculty are employed to help students learn needed competencies in agricultural education, to advise students and to supervise intern experiences. One FTE faculty member is provided for each ten degree/certification recipients (B.S., M.S., Ph.D.) An equal number of FTE faculty members provide research and/or in-service functions.

Based on the recommendations of NCATE, NASDTEC, The Ohio Standards, and the Standards for Quality Vocational Programs in Agriculture/Agribusiness Education, the following criteria for faculty selection in the proposed preservice teacher education program for teachers of agricultural education are presented in Table 7. The criteria for the selection of cooperating teachers for preservice teachers practicum experiences in presented in Table 8.

If a teacher educator is to have credibility with preservice teachers, a minimum of three years of agriculture teaching is essential. The faculty member's teaching history should be reviewed to determine the quality of their experiences. Effective written and oral communication skills should be evident in order to effectively express their views and ideas to colleagues, students, and administrators.

Faculty member's leadership roles are often outlined in a job description. Many times faculty members are asked to chair, if not serve on local, state, and national committees. Faculty members must be competent leaders in providing direction in these committees as well as the educational experiences. Moreover, faculty members must possess competent abilities in research methodologies in order to contribute to the body of knowledge in the agricultural education profession.

Commitment to the agricultural education profession is strongly advocated by the authors. This characteristic is indicative of the commitment to production of quality outcomes in teaching and research. A criteria often overlooked in higher education programs is personal and professional appearance. If the

faculty is to foster and maintain an image of professionalism, professional dress is of critical importance. The business world strongly advocate "Dressing for Success." Additionally, this characteristic often serves as the basis for impressions towards the program and the profession as a whole. One often hears, "You never get a second chance for a first impression".

Faculty members should hold a Doctor of Philosophy degree in agricultural education with an emphasis in teacher education. This offers a practical assessment of the faculty member's commitment to and proficiency in advancing agricultural education. In addition, the teacher educator must have formal training in developing curriculum and instruction in teacher education.

An integral part of preservice teacher education is practicum experiences. Cooperating teachers serve as instructors to this role, thus it is of grave importance to properly identify and select quality cooperating teachers based on selected criteria.

In order to provide preserve teachers with a full range of experiences, it is essential that the cooperating teacher have ranges of experiences which often times is dependent on the number of quality years served as an instructor. For the purpose of selecting a cooperating teacher, a minimum of four quality years of agriculture teaching is required with a Master's degree in education.

It must be ensured that cooperating teachers possess excellent teaching qualities, effective written and oral communication skills and maintain a professional appearance. State department of education supervisors and/or university faculty will assess these qualities by means of observation. Cooperating teachers should

possess effective leadership skills and abilities and present themselves as positive role models. The quality of the cooperating teacher's program is also an important criteria for the selection of preservice teachers' practicum experiences. Facilities, curriculum, instruction, public relations, enrollment history, students, and FFA activities will serve to reflect the quality of the program.

Table 7.

Criteria For Faculty In The Preservice Preparation Program For Teachers Of Agricultural Education

Criteria	Means of Assessment	* Roles of the Teacher
Minimum of three quality years of agriculture teaching	Application, interview, and references	F A PS R PD DM U D
Demonstrates excellence in teaching	Demonstration, work sample or video tape	F PS R DM U D
Effective written and oral communication skills	Application, interview, and publications	F A PS R PD DM D
Leadership in program development and in the profession	Involvement in professional organizations and Interview	F A PS R PD DM D
Ability to conduct quality research	Documentation of publications and presentations	PS PD DM
Commitment to the profession (teaching & research)	Character references and Vita	F A PS R PD DM U D
Personal and professional appearance	Interview and observation	PS R
Ph.D. in Agricultural Education with an emphasis in teacher education	Transcripts	F A PS R PD DM U D

* Roles of the Teacher:

F = Facilitator of Learning
A = Administrator
PS = Professional and Scholar
R = Role Model
PD = Program Developer
DM = Decision Maker / Problem Solver
U = Understander of the Learner
D = Disciplinarian

Table 8.

Criteria For Selection Of Cooperating Teachers In The Preservice Preparation Program For Teachers Of Agricultural Education

Criteria	Means of Assessment	* Roles of the Teacher
Minimum of four years of agriculture teaching	State Department of Education	F A PS R PD DM U D
Demonstrates excellence in teaching	Observation by state supervisor and/or university faculty	F PS R DM U D
Positive role model	References	F A PS R D
Effective written and oral communication skills	Observation by state supervisor and/or university faculty	F A PS R PD DM D
Leadership skills and abilities	Involvement in professional organizations	F A PS R PD DM D
Personal and professional appearance	Observation by state supervisor and/or university faculty	PS R
Master's in Agricultural Education	Transcripts	F A PS R PD DM U D
Quality of the program: Facilities Curriculum Instruction Enrcllment history Students FFA activities Public Relations	Observations, documentation and references	F A PS R PD DM U D

* Roles of the Teacher:

F = Facilitator of Learning
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TORRES AND GARTON, 1991

EVALUATION

Evaluation is an essential component of the agricultural teacher education program. Definitions of evaluation have been proposed by numerous teacher educators. Mannebach and Drawbaugh (1981) stated that "there is common agreement among educators that evaluation is the assessment of the worth or value of a thing; and appraisal of some kind; the systematic and objective determination of the merit or worth of something." In addition, many educators define evaluation as a process in determining the extent to which program objectives have been met (Mannebach and Drawbaugh, 1981).

NCATE (1990) does not have a specific section identifying standards for program evaluation. However a number of references regarding program evaluation have been addressed. References to evaluation in the NCATE Standards (1990) include that teacher education programs "...adopt a model(s) that explicates the purposes, processes, outcomes and evaluation of the program" (p.45), "...design, deliver, and evaluate the curriculum" (p.45), provide "...instructional practices and evaluation that are congruent with the current state of knowledge about curriculum design, instruction, and evaluation" (p.46), "faculty...collaborate on program planning and evaluation of general education" (p.47), "faculty...collaborate in program planning and evaluation of specialty studies" (p.47), and "keep abreast of emerging evaluation techniques and engages in regular and systematic evaluation including follow-up studies..." (p.50).

NASDTEC (1989) likewise has no program evaluation section but mentions the responsibility for program evaluation. NASDTEC notes "responsibilities for curriculum development, evaluation, and

revision of the total teacher education program" and that "a process of evaluation of individual programs and of the total program be in evidence." Ohio Standards require teacher education program(s) to conduct evaluations at least every five years using a well defined plan that includes follow-up of graduates.

Evaluation of teacher education programs is needed to provide a solid foundation for decision making, program planning and program improvement. Furthermore, evaluation is needed to improve staff performance and to ensure that programs are accountable (Mannebach and Drawbaugh, 1981). Mannebach and Drawbaugh (1981) report the follow reasons for conducting evaluations: 1) to justify the expenditures invested in the program, 2) to provide an objective and valid description of the program, 3) to establish benchmarks for future comparisons, 4) to serve as a systematic review and to identify areas of strengths and weaknesses, 5) to serve as a public relations mechanism, 6) to involve people in the evaluation and provide them with information about the program, and 7) to motivate faculty and staff members.

The Association for Supervision and Curriculum Development yearbook (cited in Mannebach and Drawbaugh, 1981) suggested some general principles that are important in the evaluation of education programs. They include: stating the objectives; assembling a variety of evidence for evaluation criteria; using many measuring instruments by those responsible for, involved with, and affected by the program; continuous evaluation using objective and subjective judgments; and being concerned with context, input, process, and product measures.

Medley (1978) addressed the need to consider both process and product measures in developing a model for evaluation of teacher education programs (Figure 5). The program evaluation loop deals with the assessment of process, or formative, criteria while the program validation loop involves the product, or summative criteria. This model is conceptually appealing in that it considers the ultimate objective of teacher education which is to produce desired pupil outcomes based on performance competencies as influenced by the roles of the teacher.

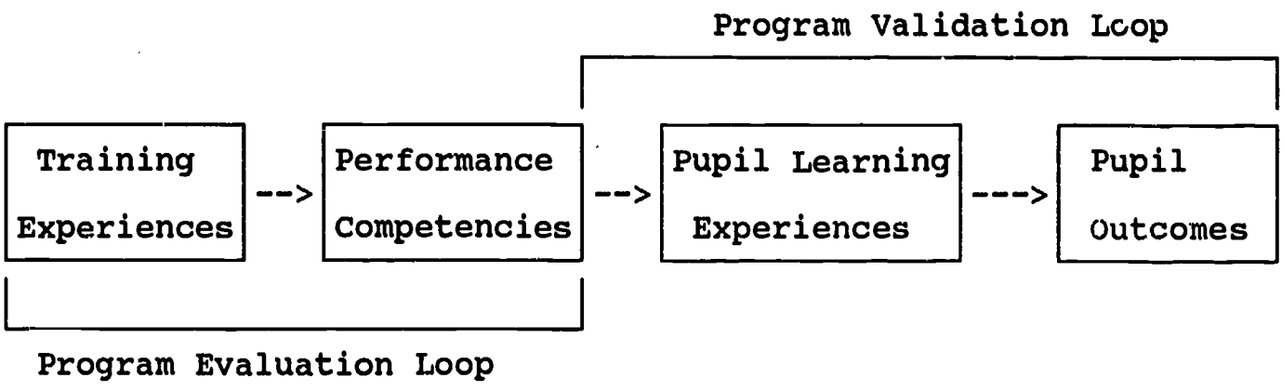

Figure 5. **Medley's Evaluation Model**

Keeping the standards addressed by NCATE, NASDTEC, and The Ohio Standards, and the recommendations by Mannebach and Drawbaugh in mind, a working plan for the evaluation of agricultural teacher education programs can be developed (Table 9). The proposed evaluation plan adapted from Miller (1988) provides for process and product evaluation of the agricultural teacher eduction program. The process (formative) evaluation considers students, curriculum, and administrative concerns. An internal evaluation will be conducted by faculty members and an advisory committee composed of students, secondary agriculture teachers, state department staff, and faculty outside the department. Faculty from other institutions and accrediting councils/agencies will conduct an external evaluation of the program.

Product (summative) evaluation centers on the desired student outcomes and teacher behaviors. Product evaluations will occur in three phases; student outcomes at the conclusion of the program, first-year teacher performance, and a five-year follow-up of departmental graduates. Phase I (student outcomes) will be assessed by departmental faculty to certify that program graduates meet the knowledge, skills and attitudes to fill the roles of a teacher of agriculture. The purpose of phase II is the evaluation of both teacher performance and the teacher's students' performance during the graduate's first year of teaching. This phase will be evaluated cooperatively by school administrators and departmental faculty. The final phase will consist of a five-year follow-up of graduates to determine the long range outcomes of the agriculture teacher education program. This follow-up will also be utilized to assess the role statement of the agriculture teacher as established

by the teacher education program. The State Department of Education and departmental faculty will be responsible for conducting the five-year follow-up.

The goal of this proposed agricultural teacher education program is to produce highly effective teachers. Cumulatively, this plan attempts to evaluate all components of the teacher education program. The objective of the proposed evaluation plan is not to "prove" that a particular program is good or best, but identifies the program's strengths and deficiencies, as well as providing guidelines for improvement.

Table 9.

Evaluation Of The Agricultural Teacher Education Program

Type of Evaluation	Evaluators	* Roles of the Teacher
Process (formative): Consideration of students, curriculum, and administrative concerns.		
Internal	Departmental Faculty	F A PS R PD DM U D
	Advisory Committee	F A PS R PD DM U D
External	Faculty from other colleges/universities	F A PS R PD DM U D
	Accreditation councils or agencies (NCATE, NASDTEC, State Dept. of Education)	F A PS R PD DM U D
Product (summative): Consideration of teacher behavior, pupil outcomes.		
Student Outcomes	Departmental faculty	F A PS R PD DM U D
First-Year Teacher	School administrators	F A PS R PD DM U D
	Departmental faculty	F A PS R PD DM U D
Five-Year follow-up	State Department of Education	F A PS R PD DM U D
	Departmental faculty	F A PS R PD DM U D

* Roles of the Teacher:

F = Facilitator of Learning
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D = Disciplinarian

DISTINGUISHING ELEMENTS

The proposed program for the preparation of preservice teachers of agricultural education reflects a solid foundation in traditional aspects of teacher preparation while incorporating several non-traditional concepts. The most notable of these distinguishing concepts are as follows:

1. The role statement recognizes that the teacher of agriculture faces many different roles. Three roles of the teacher specifically addressed in this proposed program that have not been discussed in previous proposed programs are the teacher as a 1) program developer, 2) understander of the learner, and 3) disciplinarian.
2. The curriculum is designed utilizing the semester system. A majority of the previously proposed teacher education programs for agriculture have used the quarter system. The semester system was used because most Land-Grant universities in the United States utilize the semester system.
3. The proposed program includes several courses in pedagogical studies. Courses include the following: general teaching methods course, special method courses in classroom teaching, and a course in laboratory teaching in the areas of horticulture and agricultural mechanics.
4. A special methods course in teaching agriscience and agricultural literacy have been included as suggested by the National Academy of Sciences Committee on Agricultural Education in Secondary Schools (1988).

5. An expanded practicum experience has been included with the addition of a pre-student teaching internship that will consist of five weeks. Cruickshank (1990) cites research supporting the expanded use of practicum experiences in teacher education programs.
6. The student teaching practicum experience requires 12 weeks at the cooperating training school. NCATE standards recommend a minimum of 10 weeks of student teaching.
7. The "block" concept is utilized in teaching the professional component for agriculture courses.
8. A multicultural eduction course is included under the teaching and learning theory component as advocated by NCATE and NASDTEC.
9. Preservice teachers upon completion of the program will be qualified to teach a wide range of agriculturally related topics including vocational agriculture, academic agriculture, and avocational agriculture.
10. The professional component of the proposed teacher preparation program utilizes a variety of instructional alternatives such as microteaching, reflective teaching, role playing, problem solving, demonstrations, discussions, simulations, etc. as suggested by NCATE and NASDTEC.
11. Specialized facilities are available for agricultural education courses and for courses in technical agriculture. These facilities include laboratories for horticulture and agricultural mechanics.

12. Clinical/lab teaching facilities, faculty and student media/resource room, student library, and a computer room for students are among the facility requirements.
13. Admission to the program at the completion of 65 semester hours requires evidence that the student is able to demonstrate effective teaching practices.
14. The concept of work samples are used in the selection of preservice teaching candidates and faculty.
15. The proposed program requires admission into: 1) the teacher education program and 2) the student teaching phase of the program. Two admissions allow for more selected screening of teacher candidates.
16. Recommendations by cooperating teachers who direct early experiences and pre-student teaching internships of students are used as on means of assessment for admission into the program or student teaching.
17. Admission into the preparation program will be evaluated by a selection committee consisting of three to five faculty members appointed by the department chairperson.
18. Selection criteria were developed for on-campus faculty and cooperating teachers.
19. Cooperating teachers must hold at least a Master's Degree and have had a minimum of four quality years of teaching.
20. Ongoing evaluation of the teacher preparation program is carried out utilizing Medley's (1978) evaluation model.
21. A more systematic and comprehensive program evaluation is recommended utilizing formative and summative approaches.

22. The proposed agricultural teacher education program is designed in such a way that graduates of the program will be eligible for teacher certification.

Issues And Problems Associated With Developing The Teacher Education Program In Agriculture.

Developing the Role Statement of the Teacher

1. Programmed instruction in agricultural education is constantly changing with new technologies in the agricultural industry which effects the role of the teacher a facilitator of learning (National Academy of Sciences Committee on Agricultural Education in Secondary Schools, 1988).

2. The role of an effective teacher has not been clearly defined by the profession and the public as a whole (Heck and Williams, 1984).

3. Financial and time constraints in providing the skills, attitudes, and knowledge necessary in fulfilling the roles of the teacher.

4. The roles of a teacher are influences by political, technological, cultural, and social realities (Juergenson, 1967).

5. Being a good role model for the students has been identified as an important quality of teachers by the general public and the profession. The problem arises in identifying what defines a teacher as a good role model (Juergenson, 1967).

Curriculum

1 Universities admit that they do not offer a true general education. They offer requirements simply as basic education requirements (Cruickshank, 1985, p.7).

2. General education has been hurt by lack of interest on the part of employers and a loss of interest in teaching undergraduates by faculty at universities which operate under an reward system on research and publications (Cruickshank, 1985, p.7).

3. Lack of a true definition for a general education and a general educated person (Cruickshank, 1985).

4. Lack of agreement among teacher educators regarding what constitutes the required knowledge and skills for teaching (Cruickshank, 1990).

5. Courses at the university are designed primarily to meet the needs of majors who intend advance graduate study and neglect the concerns of k-12 teachers.

6. Duplication of course content in the curriculum (Cruickshank, 1985).

7. Articulation of course scheduling.

8. The public perception of education courses is not ridged enough.

Instruction

1. Teacher educators report limited use of instructional alternatives, preferring to use the whole class instruction (lecture) and small group work. Rarely do they use laboratory (practice-feedback) regimens such as microteaching, simulations and protocols (Cruickshank, 1990, p. 129).

2. What is known about teaching is frequently disregarded. Why? (Cruickshank, 1985, p. 81).

3. Teacher educators are unable to reach consensus on the content of a single professional course, teacher educators are also uncertain and inconsistent about how they should teach (Cruickshank, 1985, p. 81).

4. Teaching is highly idiosyncratic (Cruickshank, 1990, p. 82).

5. Teacher educators are unfamiliar with instructional alternatives (Cruickshank, 1990, p. 82).

6. Teachers tend to teach the way they were taught (Dunn and Dunn, 1979, p. 241; McCormick, 1985, p. 6).

7. Teachers do not model the methods of teaching that they promote and teach preservice teachers as advocated by NASDTEC (1989).

8. Financial constraints for laboratory equipment and space for such instructional alternatives as microteaching, reflective teaching, and simulations.

9. Staffing constraints for operating laboratories.

Resources and Facilities

1. Teacher education programs rely upon several departments to provide laboratory facilities. Often these facilities are inadequate for the preparation of teachers (Miller, 1988).

2. Planning facilities for the future. When designing and construction facilities, only the present situation and needs are considered. The new facilities will be used for years in

the future, but the question remains, will the facilities be adequate in the future?

3. Location of the teacher preparation program in agriculture. Should it be housed in the College of Education or the College of Agriculture (Peters and Moore, 1984)?

4. Locating a variety and quality of programs for the placement of preservice teachers during practicum experiences.

Student Selection

1. Departments within a college should not require higher admission standards than those of the college (Annis and Paul, 1981).

2. Admission standards are criticized for both lax and inappropriate with institutions accepting 90% of their applicants (Laman and Reeves, 1983).

3. Quantitative criteria are used too heavily. Often evaluations for admissions are a one time event (Laman and Reeves, 1983).

4. Education students ranking low on admission standards (Sykes, 1983).

5. Institutions raising teacher admission standards at the response of criticism of the quality of teachers by the general public. Raising these standards are not based on empirical findings (Laman and Reeves, 1983).

6. Lack of consensus on the criteria being used in admitting candidates into teacher education programs (Laman and Reeves, 1983).

Faculty Selection

1. Ensuring that faculty are models of excellent teaching (NASDTEC, 1989; NCATE, 1990; and Ohio Standards).

2. No common set of purposes, body of knowledge, value systems or concerns exist among teacher education faculties (Haberman and Stinnett, 1973).

3. Ensuring a variety and quality of cooperating programs and teachers for the preservice teachers' practicum experiences.

4. Selecting faculty that is "flexible" and "adaptable".

Evaluation

1. A validity problem arises with internal evaluation of teacher education programs.

2. Identification of the appropriate time for evaluation of graduates of the teacher education program as to their teaching abilities.

3. There is a lack of agreement on what measures should be assessed in teacher education program evaluation (Mannebach and Drawbaugh, 1981).

4. Evaluation takes place, but the results are not utilized in improving the teacher education program.

5. Lack of incentives to conduct well-planned, organized and coordinated evaluations outside of accreditation requirements.

6. Lack of consensus on the purpose of evaluation and how it should be conducted (Mannebach and Drawbaugh, 1981).

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